

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A process for producing an oil or a polyunsaturated fatty acid (PUFA), the process comprising:
 - (a) deaerating an aqueous liquid comprising cells; and
 - (b) obtaining the oil or PUFA from the cells.
2. (original) A process according to claim 1, wherein the cells are microbial cells.
3. (currently amended) A process according to claim 1 ~~or 2~~, wherein the cells are heated or pasteurised after deaeration in (a) but before stage (b).
4. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein the aqueous liquid is a fermentation broth.
5. (currently amended) A process according to ~~any preceding claim~~ claim 1 which further comprises:
 - (c) extracting, purifying or isolating the oil or one or more PUFAs.
6. (currently amended) A process according to ~~any preceding claim~~ claim 1 wherein deaeration comprises:
 - a) application of vacuum (or reduced pressure);
 - b) mechanical deaeration/de-gassing (stirring, vibration, use of accelerative or g-force, such as in a centrifuge or a cyclon;
 - c) viscosity change (either by dilution with water or other liquid, or by increase in temperature);

- d) change in fermentation conditions, for example a reduction in airlift, air sparging or the supply of oxygen or air during fermentation, or a reduction in stirring rate;
- e) pH change, for example by lowering the pH or acidification;
- f) filtration, for example by using a filter or membrane preferably comprising an (inert) polymer, for example PTFE;
- g) gas displacement, with an inert gas such as nitrogen, a noble gas such as helium, or steam;
- h) chemical deaeration, for example using an oxygen scavenger, for example sodium sulphite or hydrazine;
- i) time, where the aqueous liquid is allowed to rest under conditions such that oxygen or air diffuses out of the liquid;

or a combination of one or more of the methods in (a) to (i).

7. (currently amended) A process according to ~~any preceding claim~~ claim 1 wherein the deaeration is effected by reduced stirring and/or gas displacement.

8. (original) A process according to claim 7 wherein gas displacement is performed using a gas comprising either no oxygen or oxygen at a concentration level below atmospheric air.

9. (currently amended) A process according to claim 7 ~~or 8~~ wherein the gas is, or comprises, nitrogen.

10. (currently amended) A process according to ~~any preceding claim~~ claim 1 wherein deaeration comprises subjecting the aqueous liquid to reduced pressure.

11. (original) A process according to claim 10, wherein said reduced pressure is a pressure of no more than 800 mbara, preferably no more than 600 mbara.

12. (currently amended) A process according to claim 10 ~~or claim 11~~, wherein the aqueous liquid is deaerated using a vacuum or degassing pump, a parasol deaerator or an umbrella nozzle.

13. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein deaeration results in an O₂ content in the aqueous liquid of less than 20 ppm, preferably less than 10 ppm.

14. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein deaeration results in a concentration of dissolved oxygen of less than 10 ppm, preferably less than 5 ppm, more preferably less than 2 ppm.

15. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein the process comprises subjecting the deaerated aqueous liquid to

(i) a pressure of above 1 bara, preferably above 1.5 bara, more preferably above 2 bara; and/or

(ii) a temperature above 60 °C, preferably above 80 °C, more preferably above 100 °C.

16. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein the cells are heated or pasteurised at a temperature above 80 °C, preferably above 90 °C, preferably above 100 °C.

17. (currently amended) A process according to ~~any preceding claim~~ claim 1 wherein the PUFA comprises, or oil comprises a PUFA which, is a C18, C20 or C22 Ω-3 or Ω-6 PUFA (optionally ARA, EPA, DHA and/or GLA).

18. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein the cells are yeast, bacterial, fungal or algal cells.

19. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein the oil is a microbial or single cell oil.

20. (currently amended) A process according to ~~any preceding claim~~ claim 1, wherein (b) comprises obtaining an oil comprising a PUFA from the cells, said oil having a POV of less than 12 and/or an AnV of less than 20.

21. (currently amended) An oil comprising a PUFA, or a PUFA, obtained by a process according to ~~any preceding claim~~ claim 1.

22. (original) An oil according to claim 21, wherein the oil is a microbial or single cell oil.

23. (original) Apparatus for producing an oil or a PUFA from microbial cells, comprising:

- (a) means for culturing or fermenting microbial cells;
 - (b) means for deaerating an aqueous liquid comprising the microbial cells ;
- and
- (c) optionally, means for obtaining the oil or PUFA from the microbial cells.

24. (original) Apparatus according to claim 23 wherein (a) comprises a fermenter vessel, (b) comprises a deaerator (optionally able to apply reduced pressure) and/or (c) comprises a homogeniser and/or a centrifuge.

25. (currently amended) Apparatus according to claim 23 ~~or 24~~ wherein (b) comprises a vacuum or degassing pump, parasol deaerator or umbrella nozzle.

26. (currently amended) Apparatus according to ~~any preceding claim~~ claim 1, wherein (b) comprises a deaerator able to apply a pressure of less than 800 mbara, preferably less than 600 mbara.